CLAIMS

What is claimed is:

1. An ablation system for treating tissue within a body organ, comprising:

an ablation source having a power terminal and a return terminal;

an ablation probe electrically coupled to the power terminal of the generator, the ablation probe including an ablation element; and

a ground probe electrically coupled to the return terminal of the generator, the ground probe configured to be inserted within the body during use;

wherein one of the ablation probe and the ground probe is configured for being intravascularly introduced to an interior of the organ, and another of the ablation probe and the ground probe is configured for being extravascularly placed in contact with an exterior of the organ.

2. The system of claim 1, wherein the ablation probe is configured for being intravascularly introduced in contact with the interior of the organ, and the ground probe is configured for being extravascularly placed in contact with the exterior of the organ.

3. The system of claim 1, wherein the ground probe is configured for being intravascularly introduced in contact with the interior of the organ, and the ablation probe is configured for being extravascularly placed in contact with the exterior of the organ.

4. The system of claim 1, wherein the ablation element comprises an expandable-collapsible body having an interior.

5. The system of claim 4, wherein the expandable-collapsible body comprises a plurality of pores sized to permit ionic transfer from the interior of the body to outside the body.

6. The system of claim 5, wherein the ablation element further comprises an electrode located inside the expandable-collapsible body.

7. The system of claim 4, wherein the expandable-collapsible body is non-porous.

8. The system of claim 7, wherein the ablation element further comprises an electrically conductive shell disposed on the body.

9. The system of claim 1, wherein the one of the ablation probe and ground probe comprises a catheter.

10. The system of claim 9, wherein the catheter further includes a stabilizer configured for applying a vacuum force to secure the ablation element relative to the organ.

11. The system of claim 1, further comprising a cannula configured for providing the one of the ablation probe and ground probe access to the organ.

12. The system of claim 11, wherein the cannula comprises a shaft having a proximal end, a distal end, and a lumen extending between the proximal end and the distal end, the lumen configured for slidably housing the one of the ablation probe and the ground probe.

13. The system of claim 12, wherein the cannula further comprises:

an imaging window mounted on the distal end of the shaft; and

an imaging cable coupled to the imaging window, the imaging cable fixedly secured to the shaft.

14. The system of claim 13, further comprising an imaging device coupled to the imaging window via the imaging cable.

15. The system of claim 12, wherein the cannula further comprises:

one or more optical windows mounted on the distal end of the shaft; and

one or more optical cables coupled to the one or more optical cables, the one or more optical cables fixedly secured to the shaft.

16. The system of claim 15, further comprising an optical device coupled to the one or more optical windows via the one or more optical cables.

17. The system of claim 1, wherein the ablation source is a radio frequency generator.

18. A method of treating tissue having a thickness, comprising:

placing one of an ablative element and a ground element in a first location adjacent the tissue;

placing another of the ablative element and the ground element in a second location adjacent the tissue; and

delivering ablation energy through the thickness of the tissue between the ablative and ground elements.

19. The method of claim 18, wherein the first location is a left atrium and the second location is a left ventricle.

20. The method of claim 18, wherein the first location is a left atrium and the second location is a right ventricle.

21. The method of claim 18, wherein the first location is a left atrium and the second location is a coronary sinus.

22. The method of claim 18, wherein the first location is a right atrium and the second location is a left ventricle.

23. The method of claim 18, wherein the first location is a right atrium and the second location is a right ventricle.

24. The method of claim 18, wherein the first location is a right atrium and the second location is a coronary sinus.

25. The method of claim 18, wherein the first location is a right ventricle and the second location is a left ventricle.

26. The method of claim 18, wherein one of the first and the second locations is selected from a group consisting of a vein, an artery, and an inferior vena cava.

27. The method of claim 26, wherein the one of the first and the second locations is a vein.

28. The method of claim 27, wherein the one of the first and the second locations is a pulmonary vein.

29. The method of claim 18, wherein the one of the ablative element and ground element is intravascularly placed in the first location, and the other of the ablative element and ground element is intravascularly placed in the second location.

30. The method of claim 18, wherein the one of the ablative element and ground element is intravascularly placed in the first location, and the other of the ablative element and ground element is extravascularly placed in the second location.

31. The method of claim 18, wherein the tissue comprises organ tissue.

32. The method of claim 31, wherein the first location is on an epithelial surface of an organ, and the second location is on an endothelial surface of the organ.

33. The method of claim 31, wherein both of the first and second locations are on an endothelial surface of the organ.

34. The method of claim 18, wherein the tissue comprises heart tissue.

35. The method of claim 34, wherein the first location is on an epicardial surface of a heart, and the second location is on an endothelial surface of the heart.

36. The method of claim 34, wherein both of the first and second locations are on an endocardial surface of a heart.

37. The method of claim 18, further comprising maintaining a delivery of ablation energy until a desired lesion is formed.

38. The method of claim 37, wherein the desired lesion is a transmural lesion.

39. The method of claim 18, wherein the tissue is at or adjacent a ventricular septum.